

Purchase Order Receipt Listing

Friday, December 23, 2016 10:40:49 AM

Page 1 of 1

All amounts are calculated in domestic currency.

All Vendors PO ID PO34655 Receipt Dates from 12/22/2016 to 12/22/2016 All Line Item Types
All Item ID/GL/WOs All Rec. Employees All Currencies
Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
Vendor ID \ Vendor Name			VU-TWMM001	TW Metals							
PO34655	1		M6061T6T0.3125W.0 f		1/3/2017	12/22/2016	60.0000		0.0000	0	\$0.00
USD	No		58 ALUM TUBE .3125 f x .058w m136493		60.0000	PLOU01			0.0000	0	
	2		M6061T6T0.375W.05 f		1/3/2017	12/22/2016	48.0000		0.0000	0	\$0.00
	No		8 6061-T6 RD Tube f .375 x.058W m136493		40.0000	PLOU01			0.0000	0	
	3		M6061T6T0.625W.12 f		1/3/2017	12/22/2016	24.0000		0.0000	0	\$0.00
	No		5 6061-T6 RD Tube f 0.625 X.125W m136493		20.0000	PLOU01			0.0000	0	
	4		M4130NT0.500W.08 f		1/3/2017	12/22/2016	37.0000		0.0000	0	\$0.00
	No		3 4130 RD tube .500 x f .083W m136493		40.0000	PLOU01			0.0000	0	
	5		71401-45		1/3/2017	12/22/2016	1.0000		0.0000	0	\$0.00
	No		PROCUREMENT QUALITY CLAUSES m136493		1.0000	PLOU01			0.0000	0	

Total Received Quantity:
Total Qty to Inspect (PO U/M): 170.0000
Total Reject Quantity: 0.0000
Total Receipt Value: 0.0000
Total Balance Due Quantity: \$0.00
0.0000



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80825114

FROM: CHIC

PAGE 1

CUST NUMBER: 1203820 NET WGT: 25.746 REQ.DATE: 12/22/16 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: GLENN SCOTT SHIP BY: 12/19/16
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: DESTINATION FREIGHT: PREPAID
CUST ORD NO.: PO34655 RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH
0001 41723 D6061-T6 5/16 OD X .058 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	60.000 FT	60.000 FT	60.000 FT	3.276

PCS
5

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49354489 HT:388604 PC: 5 CUSTOMER QTY: UOM
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:388604

0002 41952 D6061-T6 3/8 OD X .058 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	48.000 FT	48.000 FT	48.000 FT	3.254

PCS
4

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49358768 HT:1093980 PC: 4 CUSTOMER QTY: UOM
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:433920

0003 42588 D6061-T6 5/8 OD X .125 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	24.000 FT	24.000 FT	24.000 FT	5.541

PCS
2

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49360893 HT:F002300110001 PC: 2 CUSTOMER QTY: UOM
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:221968

8p/6-12-23

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80825114 FROM: CHIC PAGE 2

CUST NUMBER: 1203820 NET WGT: 25.746 REQ.DATE: 12/22/16 CONFIRMED
 SOLD TO: SHIP TO:
 DART AEROSPACE LTD DART AEROSPACE LTD
 1270 ABERDEEN ST 1270 ABERDEEN ST
 HAWKSBURY ON HAWKSBURY ON
 CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: GLENN SCOTT SHIP BY: 12/19/16
 TERMS: NET 30 DAYS VIA: COMMON CARRIER
 F.O.B.: DESTINATION FREIGHT: PREPAID
 CUST ORD NO.: PO34655 RELEASE NO.:
 RECEIVING PHONE:

LINE	ITEM DESCRIPTION	WIDTH	LENGTH
0004	32821 SMLSCD 4130 6736 1/2 X .083 WA		17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	40.000 FT	37.000 FT	37.000 FT	13.675

PCS
2

** 1 TEST REPORTS REQUIRED **
 ** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00
 PO:49357242 HT:MM16101443 PC: 2 CUSTOMER QTY: UOM
 MLT:UNITED STATES MFG:UNITED STATES SLB/CL:145149

BROKERS KUEHNE AND NAGEL LTD

Sp/6-12-23

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
YRC	REDDICRATE	1.000	52.000	4.0000	227.0000	5
		1.000	52.000			

BY: MG
 RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED _____

DATE FILLED _____

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
 PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
 REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80825114

FROM: CHIC

PAGE 3

CUST NUMBER: 1203820	NET WGT: 25.746	REQ.DATE: 12/22/16	CONFIRMED
SOLD TO:	SHIP TO:		
DART AEROSPACE LTD	DART AEROSPACE LTD		
1270 ABERDEEN ST	1270 ABERDEEN ST		
HAWKESBURY ON	HAWKESBURY ON		
CANADA	CN K6A 1K7	ONTARIO CANADA	CN K6A 1K7

SALESPERSON:	GLENN SCOTT	SHIP BY:	12/19/16
TERMS:	NET 30 DAYS	235 TUBEWAY	
F.O.B.:	DESTINATION	CAROL STREAM	IL 60188
CUST ORD NO.:	PO34655		
VIA:	COMMON CARRIER		
FREIGHT:	PREPAID		
RELEASE NO.:			
RECEIVING PHONE:			

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk *Marie A. Sheno* Date: 12/19/16

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.
<http://www.twmetals.com/invoice-terms.html>



PRECISION TUBE CO.
287 WISSAHICKON AVE.
NORTH WALES PA 19454

Control No: 1604

CERTIFIED TEST REPORT

CUSTOMER PURCHASE ORDER NO.	CUST. ORD. NO.	PRECISION TUBE P/N
49354489 LINE 001	422327	24A031250580005

SOLD: TW METALS
TO 175 TUBEWAY
FOREST PARK, GA 30298
UNITED STATES

SHIP: TW METALS
TO 175 TUBEWAY
FOREST PARK, GA 30298
UNITED STATES

QUANTITY ORD.	DESCRIPTION	QTY. SHIPPED	DATE SHIPPED
1824 FT	METAL - 6061 ALUM TEMPER - T6 SPEC - AMS 4082P ASTM-B-210-12 AMS-WW-T-700/6C LENGTH - 12 FT LGTH TOL +.1250 IN -.0000 IN SHAPE - ROUND FINISH - STRAIGHT EXACT LENGTHS OD .3125 +.0030 -.0030 ID WALL .0580 +.0040 -.0040	2004 FT	08/05/16

MECHANICAL PROPERTIES

SAMPLE #	TENSILE STRENGTH (P.S.I.)	YIELD STRENGTH (P.S.I.)	ELONGATION IN 2 INCHES (%)	ROCKWELL HARDNESS	AVERAGE GRAIN SIZE (MM.)
1	45,775	40,439	17		

TEST REPORTS

DESTRUCTIVE TESTS

ACCEPTED BY

Comments: FAR BAA COMPLIES, DFARS BAA COMPLIES, FAR TAA COMPLIES

49354489
AUG 09 2016

TW METALS

NON-DESTRUCTIVE TESTS

EDDY CURRENT: PASS

CHEMICAL COMPOSITION

ALLOY: 6061	HEAT:	TRACEABILITY #: 388604
		RAW MATL VENDOR: PTC2249 - Kaiser Aluminum
Min	Si 0.40 Fe 0.15 Cu 0.15 Mn 0.80 Cr 0.04 Zn 0.25 Ti 0.15 Al Rem.	
Max	0.80 0.70 0.40 0.15 1.20 0.35 0.25 0.15	
OTHER ELEMENTS: 0.05 MAX EACH / 0.15 MAX TOTAL		

We hereby certify that the material has been manufactured and tested in accordance with the requirements of the applicable specifications and descriptions set forth on Precision Tube's sales acknowledgement. During the manufacturing, testing and inspection, the product did not come into direct contact with mercury or any of its compounds, nor with any mercury containing device employing a single boundary containment. Test results indicate that the material is compliant with the current revision of the RoHS Directive (2011/65/EU).

Melted and Manufactured in USA
QMS Registered to ISO 9001: 2008

By:

Art Onaitis
QA Manager

08/05/16

Page: 1 of 1

AG

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
2425 STEVENS DRIVE
RICHLAND, WA 99352

CUSTOMER PO NUMBER: PTC2249		CUSTOMER PART NUMBER: SPIRIT-371850		PRODUCT DESCRIPTION: 5.400 LB/PC .500 LB-0 LB 1.312 OD X .085 WALL ESRT	
KAISER ORDER NUMBER: 320031	LINE ITEM: 001	SHIP DATE: 04/01/2016	KAISER LOT NUMBER: 50751-323	ALLOY: 6061	TEMPER: O
WEIGHT SHIPPED: 16135.000 LB	QUANTITY: 2913.000 PCS	B/L NUMBER: 004991	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 13.984 FT
SHIP TO: PRECISION TUBE CO 287 WISSAHICKON AVENUE N. WALES, PA 19454 USA			SOLD TO: MUELLER INDUSTRIES, INC PRECISION TUBE 8285 TOURNAMENT DRIVE STE. 150 MEMPHIS, TN 38125 USA		



Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	%Elong in 2	HARDNESS	CONDUCT.	BEND
50751-323	0001	0002	17.3	5.9	26.7	NA N/A	N/A	N/A
50751-323	0001	0003	17.3	5.9	26.7	NA N/A	N/A	N/A
50751-323	0001	0004	17.3	5.4	27.2	NA N/A	N/A	N/A
50751-323	0001	0005	18.0	6.1	28.0	NA N/A	N/A	N/A
50751-323	0001	0006	17.4	5.7	26.4	NA N/A	N/A	N/A
50751-323	0001	0007	17.9	6.2	27.6	NA N/A	N/A	N/A
50751-323	0001	0008	17.5	5.8	26.6	NA N/A	N/A	N/A
50751-323	0001	0009	17.7	5.7	28.6	NA N/A	N/A	N/A
50751-323	0001	0010	16.9	5.6	25.2	NA N/A	N/A	N/A
50751-323	0001	0011	17.6	5.8	27.9	NA N/A	N/A	N/A
50751-323	0001	0012	17.8	6.9	27.4	NA N/A	N/A	N/A
50751-323	0001	0013	18.1	6.1	27.2	NA N/A	N/A	N/A
50751-323	0001	0014	17.4	5.7	28.3	NA N/A	N/A	N/A
50751-323	0001	0015	17.0	5.6	28.6	NA N/A	N/A	N/A
50751-323	0001	0016	18.2	5.8	26.6	NA N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	.0
F75366	.58	.29	.22	.06	.98	.08	.05	.02	.00	.00	.00	.01	.02

Applicable Requirements:

ASTM-B241-12 NON-STENCILED ASTM-B221-13 ASTM-B345-11 AMS-QQ-A-200/8 97(R07) TYPE I
UNS#A96061 Also conforms to EN 10204 3.1

TEST REPORTS
ACCEPTED BY

49354489
AUG 09 2016

L.B.
TW METALS

76

KAISER
ALUMINUM
FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
2425 STEVENS DRIVE
RICHLAND, WA 99352

Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MERCURY IS NOT A NORMAL BACKGROUND ELEMENT IN ALUMINUM ALLOYS. NEITHER MERCURY NOR ANY OF ITS COMPOUNDS ARE UTILIZED BY KAISER ALUMINUM IN THE MANUFACTURE OF THIS MATERIAL.

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

JOSEPH AMES, QUALITY MANAGER

Jph

**TEST REPORTS
ACCEPTED BY**

AUG 09 2016

Sh
TW METALS

Plant Serial: 00013829
Kaiser Order Number: 320031
Line Item: 001

AG



PRECISION TUBE CO.
287 WISSAHICKON AVE.
NORTH WALES PA 19454

Control No: 2340

CERTIFIED TEST REPORT

CUSTOMER PURCHASE ORDER NO.	CUST. ORD. NO.	PRECISION TUBE P/N
M 49358768 LINE 001	433920	24A037500580006

SOLD: TW METALS
TO 235 TUBEWAY
CAROL STREAM, IL 60188
UNITED STATES

SHIP: TW METALS
TO 235 TUBEWAY
CAROL STREAM, IL 60188
UNITED STATES

QUANTITY ORD.	DESCRIPTION	QTY. SHIPPED	DATE SHIPPED
3204 FT	METAL - 6061 ALUM TEMPER - T6 SPEC - AMS 4082P AMS-WW-T-700/6C ASTM-B-210-12 LENGTH - 12 FT LGTH TOL +.1250 IN -.0000 IN SHAPE - ROUND FINISH - STRAIGHT EXACT LENGTHS OD 3750 +.0030 -.0030 ID WALL .0580 +.0040 -.0040	3120 FT	10/26/16

MECHANICAL PROPERTIES

SAMPLE #	TENSILE STRENGTH (P.S.I.)	YIELD STRENGTH (P.S.I.)	ELONGATION IN 2 INCHES (%)	ROCKWELL HARDNESS	AVERAGE GRAIN SIZE (MM.)
1	44,801	39,368	14		

DESTRUCTIVE TESTS

FLATTENING: PASS

Comments: FAR BAA COMPLIES, DFARS BAA COMPLIES, FAR TAA COMPLIES

TW METALS
NOV 15 16
ACCEPTED BY

NON-DESTRUCTIVE TESTS

EDDY CURRENT: PASS

CHEMICAL COMPOSITION

ALLOY:	6061	HEAT:	TRACEABILITY # 1093980						RAW MATL VENDOR: PTC6847 - Kaiser Aluminum
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Min	0.40		0.15		0.80	0.04			Rem.
Max	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	
OTHER ELEMENTS: 0.05 MAX EACH / 0.15 MAX TOTAL									

We hereby certify that the material has been manufactured and tested in accordance with the requirements of the applicable specifications and descriptions set forth on Precision Tube's sales acknowledgement. During the manufacturing, testing and inspection, the product did not come into direct contact with mercury or any of its compounds, nor with any mercury containing device employing a single boundary containment. Test results indicate that the material is compliant with the current revision of the RoHS Directive (2011/65/EU).

Melted and Manufactured in USA
QMS Registered to ISO 9001: 2008

By: Art Onalits
Art Onalits
QA Manager

10/26/16

Page: 1 of 1

KAISER ALUMINUM

FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
2425 STEVENS DRIVE
RICHLAND, WA 99352



CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CUSTOMER PO NUMBER: PTC6847		CUSTOMER PART NUMBER: SPIRIT-371850		PRODUCT DESCRIPTION: 5.400 LB/PC .500 LB/0 LB 1.312 OD X .085 WALL ESRT	
KAISER ORDER NUMBER: 320749	LINE ITEM: 001	SHIP DATE: 09/16/2016	KAISER LOT NUMBER: 50751-344	ALLOY: 6061	TEMPER: O
WEIGHT SHIPPED: 11932.000 LB	QUANTITY: 2137.000 PCS	B/L NUMBER: 005129	DIAM/DAF/THKNS:	WIDTH:	LENGTH: 13.984 FT
SHIP TO: PRECISION TUBE CO 287 WISSAHICKON AVENUE N. WALES, PA 19454 USA			SOLD TO: MUELLER INDUSTRIES, INC PRECISION TUBE 8285 TOURNAMENT DRIVE STE. 150 MEMPHIS, TN 38125 USA		

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS(KSI)	YTS(KSI)	%Elong in 2	HARDNESS	CONDUCT.	BEND
50751-344	0001	0001	16.9	6.0	28.1	N/A	N/A	N/A
50751-344	0001	0002	17.0	5.3	26.7	NA	N/A	N/A
50751-344	0001	0003	17.3	5.8	28.2	N/A	N/A	N/A
50751-344	0001	0004	17.1	5.1	28.2	N/A	N/A	N/A
50751-344	0001	0005	17.2	5.9	28.9	N/A	N/A	N/A
50751-344	0001	0006	16.4	5.9	26.7	N/A	N/A	N/A
50751-344	0001	0007	17.3	6.3	28.0	N/A	N/A	N/A
50751-344	0001	0008	16.6	5.9	27.8	N/A	N/A	N/A
50751-344	0001	0009	17.0	6.1	27.3	N/A	N/A	N/A
50751-344	0001	0010	17.2	5.7	26.5	N/A	N/A	N/A
50751-344	0001	0011	16.5	6.0	27.2	N/A	N/A	N/A
50751-344	0001	0012	16.9	6.2	26.9	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	.0
F76008	.59	.26	.22	.04	1.00	.10	.05	.02	.00	.00	.00	.01	.03
F76012	.61	.27	.22	.04	1.01	.08	.06	.02	.00	.00	.00	.01	.03
F76085	.61	.27	.23	.04	.98	.08	.06	.03	.00	.00	.00	.01	.02

Applicable Requirements:

ASTM-B241-16 NON-STENCILED ASTM-B221-14 ASTM-B345-11 AMS-QQ-A-200/8A TYPE I
UNS#A96061 Also conforms to EN 10204 3.1

Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MERCURY IS NOT A NORMAL BACKGROUND ELEMENT IN ALUMINUM ALLOYS. NEITHER MERCURY NOR ANY
OF ITS COMPOUNDS ARE UTILITIZED BY KAISER ALUMINUM IN THE MANUFACTURE OF THIS MATERIAL.

Plant Serial: 00014763
Kaiser Order Number: 320749
Line Item: 001



C

KAISER
ALUMINUM
FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

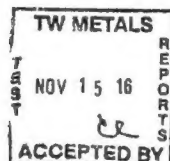
KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
2425 STEVENS DRIVE
RICHLAND, WA 99352

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

JOSEPH AMES, QUALITY MANAGER

Jph



KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49360893-1		CUSTOMER PART NUMBER: 42588		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 221968	LINE ITEM: 001	SHIP DATE: 12/09/2016	KAISER LOT NUMBER: F00230011	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 405.000 LB	QUANTITY: 146.000 PCS	B/L NUMBER: 223721	DIAM/DAF/THKNS: -	WIDTH: -	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
F00230011	0001	1	45.4	39.1	16.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D76008	.59	.26	.22	.04	1.00	.10	.05	.02	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.1250"; Round @
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS-4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.

DAS
14
9-89

17/01/04



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA (DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5 TRADE AGREEMENTS).

Plant Serial: 00023630
Kaiser Order Number: 221968
Line Item: 001

KAISER
ALUMINUM
FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

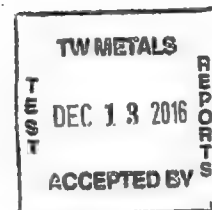
KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

L. Kattentidt





PLYMOUTH TUBE CO. USA®

212 Industrial Park Road, Eupora, Mississippi 39744
Phone: (662) 258-2420 Fax: (662) 258-2075

PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

145149 - 1 / 1

SHIP TO

TW Metals
235 Tubeway Drive
Carol Stream, IL 60188
USA

WORK ORDER A45149
HEAT NUMBER MM16101443
MELT SOURCE Nucor Steel - USA Melt/Mfg



CUSTOMER P.O. M 49357242	CUSTOMER PART 32821	QUANTITY 2,350.5	LADING NO ft 00089025	CERT ID / REV 02	CERT DATE 10/15/2016							
PART DESCRIPTION H05000830J002 OD: 0.5000" Max: 0.5050" Min: 0.4950" Wall: 0.0830" Max: 0.0910" Min: 0.0750" Length: 17.00' / 24.00' Lgth Tol: RANDOM CUT LENGTH Lgth: 17.00' / 24.00' Spec: Mil-T 6736B Seamless Aircraft Grade: 4130 Finish: Cond N												
<div style="float: right; border: 1px solid black; padding: 5px; text-align: center;"> TW METALS OCT 17 16 ACCEPTED BY </div> <div style="clear: both;"></div>												
CERTIFICATION REQUIREMENTS FAR BAA (FAR 52.225-1 Buy America Act Supplies). DFARS 252.225-7001 By America Act & Bal. of Payments Program FAR TAA (FAR 52.225-5 Trade Agreements)(Paragraph 1,3,4,5)This material was Eddy Current tested and conforms to the requirements of ASTM A-450. The Grain size is determined and reported by the raw material supplier in accordance to ASTM E-112. This raw material was magnetic particle inspected by the raw material supplier in accordance to AMS 2640J and/or ASTM E-1444, and rated as Frequency, and Severity to AMS 2301, latest revision. Yield is determined by using the 0.2% offset method. Material certified to MIL-T 6736B, AMS-T 6736B and AMS 6360 M.												
Chemical Analysis												
C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Ti	Al	Sn
.324	.565	.008	.005	.236	.18	.141	1.073	.212	.003	.002	.021	.006
Physical Properties												
Freq.	Severity	Grain Size										
.000	.000	7										
Mechanical Properties												
TEST	UNITS	#TESTS	HIGH	LOW	AVERAGE	STD-DEV						
Tensile	Psi	3	112900	111200	112000	854						
Yield	Psi	3	105800	102200	103433	2050						
Elongation	%	3	16	13	15	2						
TEST	RESULT											
Decarb/OD	Pass											
Total ID/OD decarb	Pass											
TEST	UNITS	#TESTS	HIGH	LOW	AVERAGE	STD-DEV						
Rockwell C	Rc	3	29	27	28	1						
Rockwell B	Rb											

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Eupora in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube. Product free from hazardous materials.

Don E. Young
Quality Assurance



PLYMOUTH TUBE CO. USA®

212 Industrial Park Road, Eupora, Mississippi 39744
Phone: (662) 258-2420 Fax: (662) 258-2075

PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

145149 - 1 / 1

SHIP TO

TW Metals
235 Tubeway Drive
Carol Stream, IL 60188
USA

WORK ORDER A45149
HEAT NUMBER MM16101443
MELT SOURCE Nucor Steel - USA Melt/Mfg



CUSTOMER P.O.	CUSTOMER PART	QUANTITY	LADING NO	CERT ID / REV	CERT DATE
M 49357242	32821	2,350.5 ft	00089025	02	10/15/2016
PART DESCRIPTION H05000830J002					
<p>This test report data is for the heat Chemistry Stated above. Drawn in the USA</p> <p>End of Certification</p> <p>TW METALS OCT 17 16 ACCEPTED BY</p>					

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Eupora in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube. Product free from hazardous materials.

Dean E. Young
Quality Assurance

MATERIAL RECEIPT INSPECTION FORM

MATERIAL M4130UT050021093

PO / BATCH NO: 834655 / M134493

DATE: 17-01-03

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 40
 QUANTITY INSPECTED: 40
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .033
 THICKNESS RECEIVED: .
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL	(Y)	N	
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT MATERIAL	(Y)	N	
CORRECT REF # TO LINK CERT	(Y)	N	<u>M16101443</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>9</u> DATE: <u>17-01-03</u>	SIGNED OFF BY: _____ DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606IT6 T.3125W.058 PO / BATCH NO: 34655/136493
 DATE: 17/01/04

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 60'
 QUANTITY INSPECTED: 60'
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .058
 THICKNESS RECEIVED: .055
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL	(Y) N	<u>606IT6</u>
CORRECT THICKNESS	(Y) N	<u>.055</u>
PHOTO REQUIRED	(Y) (N)	
CORRECT MATERIAL	(Y) (N)	<u>ASTM A286 OR A286-8 ASTM B210</u>
CORRECT REF # TO LINK CERT	(Y) N	<u>HEAT# 388604</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	<u>M606IT6 T.3125W.058</u>
CORRECT M# ON THE MATERIAL	(Y) N	<u>M136493</u>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>14</u>	SIGNED OFF BY: _____		
DATE: <u>17/01/04</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6 T.O. 375 U. 058

PO / BATCH NO 34655/136493

DATE: 17/01/04

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 48'
 QUANTITY INSPECTED: 48'
 QUANTITY REJECTED: _____

THICKNESS ORDERED: 1058
 THICKNESS RECEIVED: 1055
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y	N	
CORROSION	Y	<input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	N	
CORRECT MATERIAL	<input checked="" type="radio"/> Y	N	<u>6061T6</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y	N	<u>.055</u>
PHOTO REQUIRED	Y	<input checked="" type="radio"/> N	
CORRECT MATERIAL	<input checked="" type="radio"/> Y	N	<u>ASTM B210</u>
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	N	<u>HEAT # 1093980</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	N	<u>M6061T6 T.O. 375 U. 058</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	N	<u>M136493</u>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>14</u> <u>9-89</u>	SIGNED OFF BY: _____		
DATE: <u>17/01/04</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: 6061T6 TO .025W, .125 PO / BATCH NO.: 34655/136493
 DATE: 17/01/04

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 24'
 QUANTITY INSPECTED: 24'
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .125
 THICKNESS RECEIVED: .125
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	N	
CORROSION	Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	<u>6061T6</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	N	<u>.125</u>
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	<u>ASTM B210</u>
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	N	<u>HEAT # FDD2300/110001</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	N	<u>6061T6 TO .025W, .125</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	N	<u>M136493</u>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>14</u> <u>0-80</u>	SIGNED OFF BY: _____	
DATE: <u>17/01/04</u>	DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34655**

Purchase Order Date 12/16/2016

PO Print Date 12/16/2016

Page Number 1 of 3

Order From :

VU-TWM001

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED

DEC 16 2016

Contact Name

Vendor Phone 585 768 5600

Ship To Contact

Ship To Phone

Ship Via: YRC COLLECT

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M6061T6T0.3125W.058	ALUM TUBE .3125 x .058w	12/23/2016 Yes 12/23/2016		60.00 f	\$2.50	\$150.00

MATERIAL: 6061-T6 OR 6061-T651/T6510/T6511/T62
SQUARE TUBING PER AMS-QQ-A-225/8 OR AMS 4117/
4128/4115/4116 OR PER AMS-QQ-A200/8 OR AMS 4160

Line Total: \$150.00

2	M6061T6T0.375W.058	6061-T6 RD Tube .375 x.058W	12/23/2016 Yes 12/23/2016		40.00 f	\$2.15	\$86.00
---	--------------------	-----------------------------	---------------------------------	--	------------	--------	---------

MATERIAL: 6061-T6 OR 6061-T651/T6510/T6511/T62
SQUARE TUBING PER AMS-QQ-A-225/8 OR AMS 4117/
4128/4115/4116 OR PER AMS-QQ-A200/8 OR AMS 4160

Line Total: \$86.00

Note:

12/16/2016



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34655**

Purchase Order Date 12/16/2016

PO Print Date 12/16/2016

Page Number 2 of 3

Order From :

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

VU-TWM001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 585 768 5600

Ship To Contact

Ship To Phone

Ship Via: YRC COLLECT

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms Net 30

Currency USD

FOB FCA - (Free Carrier)

3	M6061T6T0.625W.125	6061-T6 RD Tube 0.625 X.125W	12/23/2016	20.00	\$5.15	\$103.00
---	--------------------	---------------------------------	------------	-------	--------	----------

Yes

12/23/2016

MATERIAL: 6061-T6 OR 6061-T651/T6510/T6511/T62
SQUARE TUBING PER AMS-QQ-A-225/8 OR AMS 4117/
4128/4115/4116 OR PER AMS-QQ-A200/8 OR AMS 4160

Rec'd 24 ft

Line Total: \$103.00

4	M4130NT0.500W.083	4130 RD tube .500 x .083W	12/23/2016	40.00	\$4.00	\$160.00
---	-------------------	------------------------------	------------	-------	--------	----------

Yes

12/23/2016

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING
AS PER MIL-T-6736 OR AMS 6371/6360/6361
6362/6373/6374

Rec'd 37 ft

Line Total: \$160.00

Note:

12/16/2016



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34655**

Purchase Order Date 12/16/2016

PO Print Date 12/16/2016

Page Number 3 of 3

Order From :

VU-TWM001

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 585 768 5600

Ship To Contact

Ship To Phone

Ship Via: YRC COLLECT

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

5	71401-45	PROCUREMENT QUALITY CLAUSES	12/23/2016	1.00	\$0.00	\$0.00
---	----------	--------------------------------	------------	------	--------	--------

No

Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

12/23/2016

Line Total: \$0.00

PO Total: \$499.00

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr:

1

Change Date:

12/16/2016